

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

ZUFRE DEHESA JARRAMA (ESP HUELVA) Altitude: 480 m.

Latitude: 37°45'N Longitude: 6°24'W

Temperature observation period.: 1953-1982 (30)

Rainfall observation period....: 1961-1982 (22)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	9.30	12.80	5.70	18.10	2.10	145.9	19.46
Feb.	9.70	13.70	5.70	19.50	1.90	130.5	20.65
Mar.	11.20	15.50	7.00	22.10	3.10	94.5	32.29
Apr.	13.60	18.50	8.60	25.60	4.60	75.3	47.90
May.	17.20	22.90	11.40	30.60	6.50	50.3	79.69
Jun.	20.90	27.50	14.20	35.10	9.00	35.0	111.72
Jul.	25.30	33.20	17.40	38.90	12.50	3.2	155.60
Aug.	25.40	33.30	17.40	38.70	13.50	3.1	146.62
Sep.	22.60	29.50	15.70	35.50	11.00	28.0	106.95
Oct.	17.40	22.40	12.40	29.10	7.80	98.9	63.43
Nov.	12.80	17.10	8.60	23.30	4.80	95.5	33.01
Dec.	10.10	13.90	6.30	19.80	2.50	143.7	21.84
Year	16.29	21.69	10.87	28.02	6.61	904	839.15

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	348
Compensated thermicity index.....(Itc):	348
Simple continentality index.....(Ic):	16.1
Diurnality index.....(Id):	15.9
Annual ombrothermic index.....(Io):	4.62
Monthly estival ombrothermic index.....(Ios1):	0.12
Bimonthly estival ombrothermic index.....(Ios2):	0.12
Threemonthly estival ombrothermic index.....(Ios3):	0.58
Fourmonthly estival ombrothermic index.....(Ios4):	1.03
Annual ombro-evaporation index.....(Ioe):	1.08
Annual positive temperature.....(Tp):	1955
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	716
Positive precipitation.....(Pp):	904

N. of Months	P>4T	P:2T-4T	PT-2T	P<T	T<0
	7	1	2	2	0

Latitudinal Belt....: Low Eutemperate

Continentality.....: Oceanic - Low Euoceanic

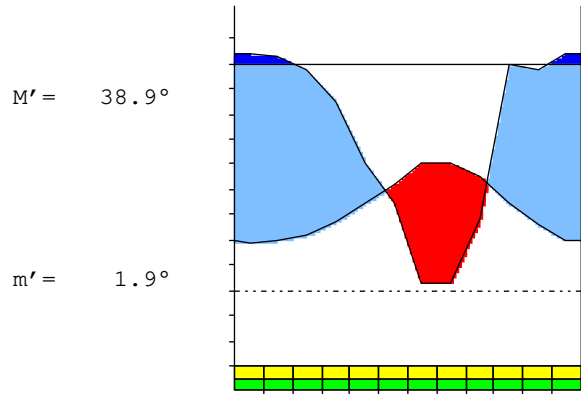
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt....: LOW MESOMEDITERRANEAN LOW SUBHUMID

ZUFRE DEHESA JARRAMA (ESP HUELVA)

480 m

P= 904 37° 45'N 6° 24'W 30/22 y.
 T= 16.3 ° Ic= 16.1 Tp= 1955 Tn= 0
 m= 5.7 ° M= 12.8 ° Itc= 348 Io= 4.6



MEDITERRANEAN PLUVISEASONAL-OCEANIC
 LOW MESOMEDITERRANEAN LOW SUBHUMID

WATER INDEX CARD ZUFRE DEHESA JARRAMA (ESP HUELVA)

Altitude: 480 m. Latitude: 37° 45'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	9.3	19	146	0	100	19	0	126	93	6.4
Feb.	9.7	21	131	0	100	21	0	110	102	5.3
Mar.	11.2	32	95	0	100	32	0	62	82	1.9
Apr.	13.6	48	75	0	100	48	0	27	55	0.5
May.	17.2	80	50	-29	71	80	0	0	27	-0.3
Jun.	20.9	112	35	-71	0	106	6	0	14	-0.6
Jul.	25.3	156	3	0	0	3	152	0	7	-0.9
Aug.	25.4	147	3	0	0	3	144	0	3	-0.9
Sep.	22.6	107	28	0	0	28	79	0	2	-0.7
Oct.	17.4	63	99	35	35	63	0	0	1	0.5
Nov.	12.8	33	96	62	98	33	0	0	0	1.8
Dec.	10.1	22	144	2	100	22	0	120	60	5.5
Year	16.3	839	904	*	*	458	381	446	446	*

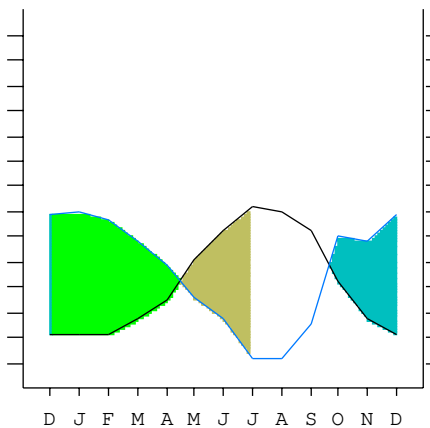
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

ZUFRE DEHESA JARRAMA (ESP HUELVA)

37°45'N 6°24'W 480 m 30/22 y.

T= 16.3 Ic= 16.1 MEDITERRANEAN PLUVISEASONAL-OCEANIC
 m= 5.7 Tp= 1955 LOW MESOMEDITERRANEAN
 M= 12.8 Tn= 0 LOW SUBHUMID
 M' = 38.9 Itc= 348
 m' = 1.9 Io= 4.6
 P= 904 mm ———
 PE= 839 mm ———

Imbibing	21 Sep.
Saturation	1 Dec.
Reserve Use	15 Apr.
Deficit	28 Jun.



ZUFRE DEHESA JARRAMA (ESP HUELVA)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [B2b]
 + Type: B. Oceanic
 + Subtype: 2. Euoceanic
 + Variant: b. Low
 Thermic types [B1.A3]
 + Latitudinal zone: B. Temperate
 + Latitudinal belt: 1. Low Eutemperate
 + Thermic type: A. Warm
 + Thermic subtype: 3. Subwarm
 Bioclimatic types [B8.3b.6b]
 + Macrobioclimate: B. MEDITERRANEAN
 + Bioclimate: 8. PLUVISEASONAL-OCEANIC
 + Bioclimatic variant .:
 + Thermic type.....: 3. MESOMEDITERRANEAN
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 6. SUBHUMID
 + Ombrothermic subtype : b. LOW
 Bioclimatic ClassificationMepo.Mme.Shu.Euo

ZUFRE DEHESA JARRAMA (ESP HUELVA)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 219
 Coldest semester of the year.....(Psw): 685
 Warmest four months period of the year.....(Pcm1): 69
 Following warmest four months period.....(Pcm2): 484
 Positive precipitation dryest 3 months.....(Ppd): 34
 Positive precipitation dryest 2 months.....(Ppd2): 6
 Positive precipitation dryest 1 month.....(Ppd1): 3
 Positive precipitation warmest 3 months.....(Pps): 34
 Positive precipitation warmest 2 months.....(Pps2): 6
 Positive precipitation warmest 1 month.....(Pps1): 3
 Positive precipitation coldest 3 months.....(Ppw): 420
 Positive precipitation coldest 2 months.....(Ppw2): 276
 Positive precipitation coldest 1 month.....(Ppw1): 146

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	420	220	41	222

Seasonal rainfall rhythms: W > F > P > S

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 25.4
 Average coldest month [T].....(Tmin): 9.3
 Maximum temp. warmest month [M].....(Tmmax): 33.3
 Minimum temp. coldest month [m].....(Tmmin): 5.7
 Absolute Max.temp. warmest month [M'].....(Tamax): 38.9
 Absolute Min.temp. coldest month [m'].....(Tamin): 1.9
 First warmest contrasted month [M].....(Tcmax): 33.3 (8)
 First coldest contrasted month [m].....(Tcmin): 17.4 (8)
 Estival temperature.....(Ts): 716
 Positive temperature dryest 3 months.....(Tpd): 733
 Positive temperature dryest 2 months.....(Tpd2): 507
 Positive temperature dryest 1 month.....(Tpd1): 254
 Positive temperature warmest 3 months.....(Tps): 733
 Positive temperature warmest 2 months.....(Tps2): 507
 Positive temperature warmest 1 month.....(Tps1): 254
 Positive temperature coldest 3 months.....(Tpw): 291
 Positive temperature coldest 2 months.....(Tpw2): 190
 Positive temperature coldest 1 month.....(Tpw1): 93

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SEASONAL PARAMETERS

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Warmest semester...(Sms)					o	o	o	o	o	o		
Dryest semester....(Smd)				o	o	o	o	o	o			
Warmest 4 months...(Cm1)						o	o	o	o			
Dryest 4 months....(Cmd)						o	o	o	o			
Vegetation Activity(Pav)	o	o	o	o	o	o	o	o	o	o	o	o
Ultragelid...[M'<=0] (Pf)												
Hypergelid...[M <=0] (Pf)												
Gelid.....[T <=0] (Pf)												
Subgelid.....[m <=0] (Pf)												
Pregelid.....[m'<=0] (Pf)												
Agelid.....[m'> 0] (Pf)	o	o	o	o	o	o	o	o	o	o	o	o
HiperAgelid..[all>0] (Pf)	o	o	o	o	o	o	o	o	o	o	o	o

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.93
 Mediterranean index of July.[PE/P].....(Im1): 48.62
 Mediterranean index of July & August.....(Im2): 47.97
 Mediterranean index of June, July & August....(Im3): 10.02

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	1437	1459	1305	945	753	503	350	32	31	280	989	955
Tp	101	93	97	112	136	172	209	253	254	226	174	128
Io (Iom)	14.2	15.7	13.5	8.44	5.54	2.92	1.67	0.13	0.12	1.24	5.68	7.46
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	4201 / 291			2201 / 420			413 / 716			2224 / 528		
Io (Iot)	14.44			5.240			0.577			4.212		
Semesters	December-May						June-November					
Pp(x10)/Tp	6402 / 711						2637 / 1244					
Io (Iosm)	9.004						2.120					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 9039/1955=4.62 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	1437	1459	1305	945	753	503	350	32	31	280	989	955
Tp [T*10]	101	93	97	112	136	172	209	253	254	226	174	128
Iom [Pp/Tp]	\$\$	\$\$	\$\$	844	554	292	167	13	12	124	568	746
Avm [200-Iom]	***	***	***	***	***	***	33	187	188	76	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	4201 / 291			2201 / 420			413 / 716			2224 / 528		
Iot [Pp/Tp]	1444			524			58			421		
Avs E[Avm<200]	***			***			408			***		
Upper ultrahyperarid [2]							Weak lower arid [1]					
Weak lower semiarid [1]							Strong upper semiarid [1]					

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp): 16.10
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]	24.31
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]	22.98
+ Oceanic (20<CI<40)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)]	1.19
+ Subcontinental (1.1<CI<1.7)	
Rainfall Index of Lang (1925) [R=P/T]	55.48
+ Semiarid (60>R>40)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)]	34.38
+ Humid (60>Ia>30)	
I of Emberger (1930) [Q=100*P/(Tmmax ² -Tmmin ²)]	83.97
+ Subhumid (90>Q>50)	
I of Dantin & Revenga (1940) [DR=100*T/P]	1.80
+ Humid (2>DR>0)	
Aridity Index of UNEP [I=P/PE]	1.08
+ Humid (I>0.65)	
Potencial Erosion I of Fournier (1960) [K=Pi ² /P].....	23.55
+ Very low (K<60)	

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate A. Warm and temperate warm
 + Region 3. Termoxeroteric (Mediterranean warm)
 + Thermic type: 3. Macro-mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.87	0.76	0.50	0.36	0.21	0.13	0.01	0.01	0.09	0.44	0.48	0.83
T-E ratio	4.19	4.36	5.04	6.12	7.74	9.40	11.38	11.43	10.17	7.83	5.76	4.55
Precipitation-effectiveness: 46.95						Temperature-efficiency: 87.97						
Moisture Index [MI=100*(P-PE)/PE]												
+ C2.Subhumid humid (0<MI<20)												
Index of dryness [DI=100*d/PE]												
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE]												
+ Strong surplus (20<HI)												
Potential Evapotranspiration PE												
+ Second mesothermic (712<PE<855)												

